

METHOD AND APPARATUS FOR A WASTE HEAT RECYCLING THERMAL POWER PLANT

Abstract: This invention, a waste heat recycling thermal power plant (1000), extracts heat from the environment, and concentrates this heat to produce a cfc super-ambient temperature heat source (1330) having an elevated temperature sufficient to supply a useable heat flow to an incorporated heat engine (e.g., Rankine cycle, Stirling cycle, Seebeck cycle, etc.) flow circuit (1400). Further, waste heat recycling thermal power plant (1000) produces an sfc sub-ambient temperature heat sink (1250), thus increasing the applied temperature differential, thereby permitting the thermal efficiency of the pressure expansion device (1460) to be increased as well. Lastly, waste heat recycling thermal power plant (1000) captures for reuse, much of the waste heat that its own operation liberates, thus lowering its net energy utilization per unit of mechanical power produced (a.k.a., heat rate, Btu/kwhr). In the main embodiment of its use, waste heat recycling thermal power plant (1000) would be used as the driver for a mod driven mechanical device (1520), specifically an electrical generator. Deriving its source heat by intercepting the heat that would be rejected to the environment by an electrical power generating station's cooling device, and routing this heat to waste heat recycling thermal power plant (1000). Then converting this heat to mechanical power, and subsequently to electrical power. This would result in an improvement of the electrical power generating station's net electrical power generating capacity and fuel efficiency, while simultaneously reducing the quantity of thermal (and potentially chemical) pollution released to the environment.